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### Abstract

[The proliferation of XML and its settlement as the de facto standard for information interchange in Internet, as well as the development of querying languages for XML, like XPath, have lead to a paradigm transition in the Internet database world, where the use of classical database systems has decreased in favor of techniques and standards based on semi-structured data models, from which XML is the most prominent example. At the same time, there has been an increase in the support, development and deployment of implementations of the LDAP protocol to store the most varied information. Its data model characteristics lie closer to the semi-structured model as to the relational or object model used in traditional database systems, and therefore, its use as a caching system for semi-structured databases is fully justified.] The design, internal data representation and query model of the invention, a hierarchical distributed caching system for semi-structured documents based on LDAP technology is presented that brings both, the semi-structured data model and the LDAP data model together into a system that provides the ideal characteristics for the efficient processing of XPath queries over XML documents. Transformation algorithms and experimental results have also been shown that prove the feasibility of the invention as a distributed caching system especially tailored for semi-structured data.

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